

Remarks

The Final Office Action dated November 17, 2008, lists the following rejections: claims 1-2, 4-6, 8 and 10-13 stand rejected under 35 U.S.C. § 103(a) over Wang (US Patent No. 5,686,324) and Chao (no citation given); claim 9 stands rejected under 35 U.S.C. § 103(a) over the combination of the '324 and "Chao" references, in further view of "Yu" (no citation given). The Office Action also suggests that a new title be written. Applicant traverses all rejections and the averment regarding the Title, and in this discussion set forth below, does not acquiesce to any rejection or averment in this Office Action unless Applicant expressly indicates otherwise.

All of the (newly-presented) claim rejections are improper because the Office Action has not provided any citation that identifies the cited "Chao" or "Yu" references. Applicant submits that this lack of citation is contrary to the requirements of Section 103, and further that the finality of the Office Action is accordingly improper. Applicant requests clarification and a further opportunity to respond. Applicant has based the following remarks upon an assertion that the Examiner's reference to "Chao" is to U.S. Patent No. 4,818,715, and further that the Examiner's reference to "Yu" is to U.S. Patent No. 6,225,176, while maintaining that the rejections are improper.

The Section 103 rejections are also improper because the Office Action's proposed modification of the primary '324 reference to include the self-aligned silicide (salicide) shown in FIG. 5i of the "Chao" reference would render the '324 reference inoperable for its purpose (*see, e.g.*, MPEP § 2143.01 and *In re Gordon*, 733 F.2d 900 (Fed. Cir. 1984) (A §103 rejection cannot be maintained when the asserted modification undermines purpose of the main reference). The '324 reference requires that insulating layers be formed over the gate and source/drain regions prior to the formation of source and drain contacts (*see, e.g.*, cited FIG. 19 as well as related FIG. 22, and the respective NSG and PBSG layers 245). As part of its stated purpose of reducing the number of steps (*see* column 6:18-22), the '324 reference combines the formation of source/drain contacts with the formation of vias 252 in the insulating NSG and PBSG layers (*see* FIG. 22). For instance, in preparing the respective source and drain regions for contacts (*e.g.*, vias), the '324 reference performs an etch to form vias 252, and "the top surface of each

source/drain region is 'cleared' from oxides before applying contact metallization" (*see, e.g.,* column 8:54-57).

Forming self-aligned silicide on the respective gate, source and drain contacts in the '324 reference would undermine the aforesaid purpose in requiring additional steps, prior to forming the NSG and PBSG layers. That is, rather than form the contacts in connection with via formation, separate steps would need to be carried out to remove oxide and expose the source, drain and gate regions for self-alignment thereto. Additional steps would need to be carried out in order to deposit metal at the exposed regions, and to subsequently heat-treat related heat treatment for salicidation. The step of forming via openings 252 would still need to be carried out, as would the deposition (*e.g.,* of metal) to form the vias themselves. Correspondingly, the proposed modification of the '324 reference would add steps to remove oxide from the respective gate, source and drain and, ostensibly, steps to form a metal contact layer. Applicant submits that such additional steps, where the '324 reference already provides contact regions (using fewer steps), is contrary to the M.P.E.P. and relevant law. Applicant therefore requests that the rejections be removed.

The Section 103 rejections are also improper because they fail to provide teaching or suggestion of all claim limitations. For instance, the cited portions of the "Chao" reference (to the extent Applicant understands the rejection), do not teach or suggest claim limitations as asserted, including those directed to a recessed, silicide contact at gate, source and drain regions. Clearly, the cited portions of the "Chao" reference (FIG. 5i) show a silicide contact that extends well above the surface of all three of the gate, source and drain, thus failing to correspond to related claim limitations (*see, e.g.,* claim 2).

Specifically regarding the Section 103 rejection of claim 9 over the '324 and "Chao" references in further view of the "Yu" reference, The Office Action has failed to cite any evidence in support of the assertion that one of skill in the art would be motivated to modify the '324 reference to include the indicated ion implant energy used in the "Yu" reference. Moreover, the Office Action has provided no explanation as to how the '324 reference could operate under such conditions. Instead, the Office Action appears to have erroneously relied upon an assertion that such an implant energy "would

have been obvious” without “evidence of disclosure of criticality for the range giving unexpected results.” Applicant submits that such a requirement that the Applicant demonstrate “criticality” or “unexpected results” is inapplicable where no *prima facie* case of obviousness has been presented.

In view of the above, the Section 103 rejections of all claims are improper, and Applicant requests that they be removed.

Applicant respectfully declines the Examiner’s invitation to revise the title. The claimed invention is directed to a semiconductor device and a method of manufacturing the device (*see, e.g.*, independent claims 1 and 5). The title recites “SEMICONDUCTOR DEVICE AND METHOD OF MANUFACTURING SUCH A SEMICONDUCTOR DEVICE.” Accordingly, the title is clearly descriptive. As the Office Action does not provide any explanation as to which portion of the title is not descriptive, or as to how the title (including “semiconductor device”) is not descriptive of claim the claim limitations (directed to a “semiconductor device”), Applicant cannot ascertain any issue.

In view of the remarks above, Applicant believes that each of the rejections has been overcome and the application is in condition for allowance. Should there be any remaining issues that could be readily addressed over the telephone, the Examiner is asked to contact the agent overseeing the application file, Peter Zawilski, of NXP Corporation at (408) 474-9063 (or the undersigned).

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